

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for identifying at least one of a plurality of communication channels available for communication between one of a plurality of devices and a server, wherein the plurality of communication channels are formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including  $n$  inputs,  $n > 1$ , and a switching device configured to allow connection between one of the  $n$  inputs and the associated device and connection through the controller between the remaining  $n - 1$  inputs and  $n - 1$  outputs, the method comprising:

monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, wherein the  $n$  inputs of each succeeding controller in the cascade are respectively connected in series to  $n$  outputs of a preceding one of the controllers;

determining whether at least one of the plurality of communication channels is being used for the transmission of link pulses generated by the server, wherein the presence of link pulses on one of the communication channels indicates that that particular communication channel and the respective port on the server are not currently being used for data transmission by the server and are available; and

establishing said allowed connection between the associated device and the available server port using one of the available communication channels determined to have the link pulses.

2. (Original) The method as set forth in claim 1 wherein the monitoring further comprises monitoring one of the plurality of communication channels at a time for the one or more link pulses.

3. (Original) The method as set forth in claim 2 wherein the monitoring further comprises disabling the other of the plurality of communication channels while the one of the plurality of communication channels is monitored for the one or more link pulses.

4. (Previously Presented) The method as set forth in claim 2 wherein the monitoring one of the plurality of communication channels is conducted by two or more of the controllers.

5. (Previously Presented) The method as set forth in claim 4 further comprising blocking the communication channel monitored to have the link pulses from propagating to a succeeding controller in the cascade.

6. (Previously Presented) The method as set forth in claim 1 further comprising providing an indication of which of the plurality of communication channels was the established communication channel for the associated device.

7. (Currently Amended) A computer readable medium having stored therein instructions for providing network access by identifying at least one of a plurality of communication channels available for communication between one of a plurality of devices and a server, wherein the plurality of communication channels are formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including  $n$  inputs,  $n > 1$ , and a switching device configured to allow connection between one of the  $n$  inputs and the associated device and connection through the controller between the remaining  $n - 1$  inputs and  $n - 1$  outputs, which when executed by one or more processors, causes the processors to perform the steps of:

monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, wherein the  $n$  inputs of each succeeding controller in the cascade are respectively connected in series to  $n$  outputs of a preceding one of the controllers;

determining whether at least one of the plurality of communication channels is being used for the transmission of link pulses generated by the server, wherein the presence of link pulses on one of the communication channels indicates that that particular communication channel and a respective port on the server are not currently being used for data transmission by the server and are available; and

establishing said allowed connection between the associated device and the available server port using one of the available communication channels determined to have the link pulses.

8. (Original) The computer readable medium as set forth in claim 7 wherein the monitoring further comprises monitoring one of the plurality of communication channels at a time for the one or more link pulses.

9. (Original) The computer readable medium as set forth in claim 8 wherein the monitoring further comprises disabling the other of the plurality of communication channels while the one of the plurality of communication channels is monitored for the one or more link pulses.

10. (Previously Presented) The computer readable medium as set forth in claim 8 wherein the monitoring one of the plurality of communication channels is conducted by two or more of the controllers.

11. (Previously Presented) The computer readable medium as set forth in claim 10 further comprising blocking the communication channel monitored to have the link pulses from propagating to a succeeding controller in the cascade.

12. (Previously Presented) The computer readable medium as set forth in claim 7 further comprising providing an indication of which of the plurality of communication channels was the established communication channel for the associated device.

13. (Currently Amended) A system for identifying at least one of a plurality of communication channels available for communication between one of a plurality of devices and a server, the system comprising:

a plurality of controllers cascadedly arranged for forming a plurality of communication channels from the server, each controller associated with one of the devices, including  $n$  inputs,  $n > 1$ , and a switching device configured to allow connection between one of the  $n$  inputs and the associated device and connection through the controller between the

remaining n -1 inputs and n-1 outputs, and the n inputs of each succeeding controller in the cascade are respectively connected in series to n outputs of a preceding one of the controllers;

a monitoring system that monitors, at each of the controllers, each of the plurality of communication channels formed between the plurality of controllers and the server, and determines whether at least one of the plurality of communication channels is being used for the transmission of link pulses generated by the server, wherein the presence of link pulses on one of the communication channels indicates that that particular communication channel and a respective port on the server are not currently being used for data transmission by the server and are available; and

at least one of the plurality of controllers establishes said allowed connection between the associated device and the available server port using one of the available communication channels determined to have the link pulses.

14. (Original) The system as set forth in claim 13 wherein the monitoring system monitors one of the plurality of communication channels at a time for the one or more link pulses.

15. (Original) The system as set forth in claim 14 wherein the monitoring system disables the other of the plurality of communication channels while the one of the plurality of communication channels is monitored for the one or more link pulses.

16. (Previously Presented) The system as set forth in claim 13 wherein each of the controllers has one of the monitoring systems.

17. (Previously Presented) The system as set forth in claim 16 further comprising a blocking system that blocks the communication channel monitored to have the link pulses from propagating to a succeeding controller in the cascade.

18. (Previously Presented) The system as set forth in claim 13 further comprising an indicator that indicates which of the plurality of communication channels was the established communication channel for the associated device.

19.-30. (Canceled)

31. (Previously Presented) The method as set forth in claim 1, wherein said monitoring is performed for each of the associated devices, more than one of the associated devices are simultaneously connectable to different ones of the server ports determined to be available, and the communication channel of one of said simultaneously connected devices is formed through one of the inputs and outputs of a preceding one of the controllers in cascade.

32. (Previously Presented) The medium as set forth in claim 7, wherein said monitoring is performed for each of the associated devices, more than one of the associated devices are simultaneously connectable to different ones of the server ports determined to be available, and the communication channel of one of said simultaneously connected devices is formed through one of the inputs and outputs of a preceding one of the controllers in cascade.

33. (Previously Presented) The system as set forth in claim 13, wherein more than one of the associated devices are simultaneously connectable to different ones of the server ports determined to be available, and the communication channel of one of said simultaneously connected devices is formed through one of the inputs and outputs of a preceding one of the controllers in cascade.

34. (Previously Presented) The method as set forth in claim 1, wherein said monitored communication channels are external to the server.

35. (Previously Presented) The medium as set forth in claim 7, wherein said monitored communication channels are external to the server.

36. (Previously Presented) The system as set forth in claim 13, wherein said monitored communication channels are external to the server.